

131. The kit of any one of Claims 125-129 wherein the nanoparticles of the aggregate probe are made of gold.

132. A kit comprising at least three containers:
the first container holding nanoparticles;
the second container holding a first oligonucleotide having a sequence complementary to the sequence of a first portion of a nucleic acid; and
the third container holding a second oligonucleotide having a sequence complementary to the sequence of a second portion of the nucleic acid.

133. The kit of Claim 132 further comprising a fourth container holding a third oligonucleotide having a sequence complementary to the sequence of a third portion of the nucleic acid, the third portion being located between the first and second portions.

134. The kit of Claim 132 further comprising a substrate.
135. The kit of Claim 134 further comprising:
a fourth container holding a binding oligonucleotide having a selected sequence having at least two portions, the first portion being complementary to at least a portion of the sequence of the second oligonucleotide; and
a fifth container holding an oligonucleotide having a sequence complementary to the sequence of a second portion of the binding oligonucleotide.

136. The kit of Claim 132 wherein the oligonucleotides, nanoparticles, or both bear functional groups for attachment of the oligonucleotides to the nanoparticles.

137. The kit of Claim 134 wherein the substrate, nanoparticles, or both bear functional groups for attachment of the nanoparticles to the substrate.

138. The kit of Claim 134 wherein the substrate has nanoparticles attached to it.

139. The kit of Claim 132 wherein the nanoparticles are made of gold.

140. A kit comprising:

- a substrate having oligonucleotides attached thereto which have a sequence complementary to the sequence of a first portion of a nucleic acid;
- a first container holding nanoparticles having oligonucleotides attached thereto, some of which have a sequence complementary to the sequence of a second portion of the nucleic acid; and
- a second container holding nanoparticles having oligonucleotides attached thereto which have a sequence complementary to at least a portion of the sequence of the oligonucleotides attached to the nanoparticles in the first container.

141. A kit comprising:

- a substrate;
- a first container holding nanoparticles;
- a second container holding a first oligonucleotide having a sequence complementary to the sequence of a first portion of a nucleic acid;
- a third container holding a second oligonucleotide having a sequence complementary to the sequence of a second portion of the nucleic acid; and
- a fourth container holding a third oligonucleotide having a sequence complementary to at least a portion of the sequence of the second oligonucleotide.

142. The kit of Claim 141 wherein the oligonucleotides, nanoparticles, substrate or all bear functional groups for attachment of the oligonucleotides to the nanoparticles or for attachment of the oligonucleotides to the substrate.

143. The kit of Claim 141 wherein the nanoparticles are made of gold.

144. A kit comprising:

a substrate having oligonucleotides attached thereto which have a sequence complementary to the sequence of a first portion of a nucleic acid;

a first container holding liposomes having oligonucleotides attached thereto which have a sequence complementary to the sequence of a second portion of the nucleic acid; and

a second container holding nanoparticles having at least a first type of oligonucleotides attached thereto, the first type of oligonucleotides having a hydrophobic group attached to the end not attached to the nanoparticles.

145. The kit of Claim 144 wherein:

the nanoparticles in the second container have a second type of oligonucleotides attached thereto, the second type of oligonucleotides having a sequence complementary to the sequence of the oligonucleotides on a second type of nanoparticles;

and the kit further comprises:

a third container holding a second type of nanoparticles having oligonucleotides attached thereto, the oligonucleotides having a sequence complementary to at least a portion of the sequence of the second type of oligonucleotides on the first type of nanoparticles.

146. A kit comprising at least two containers,

the first container holding particles having oligonucleotides attached thereto which have a sequence complementary to the sequence of a first portion of a nucleic acid, the oligonucleotides being labeled with an energy donor on the ends not attached to the particles,